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U.S. Army Toxic and Hazardous Materials Agency

Enhanced Preliminary Assessment Report:

Wherry Army Housing Units
St. Louis, Missouri

November 1989

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prepared for

Commander
U.S. Army Toxic and Hazardous Materials Agency
Aberdeen Proving Ground, Maryland 21010-5401

prepared by

Environmental Research Division
Argonne National Laboratory
Argonne, Illinois 60439

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SUMMARY

The Wherry housing facility located in St. Louis, Mo., represents no imminent or substantial threat to human health or the environment. There is no evidence to suggest that hazardous or toxic constituents have ever been released from this property. These housing units were originally developed as private real estate. They were not constructed to support a Nike missile battery or any other military operation.

No actions are recommended prior to the release of this property.

1 INTRODUCTION

In October 1988, Congress passed the Defense Authorization Amendments and Base Closure and Realignment Act, Public Law 100-526. This legislation provided the framework for making decisions about military base closures and realignments. The overall objective of the legislation is to close and realign bases so as to maximize savings without impairing the Army's overall military mission. In December 1988, the Defense Secretary's ad hoc Commission on Base Realignment and Closure issued its final report nominating candidate installations. The Commission's recommendations, subsequently approved by Congress, affect 111 Army installations, of which 81 are to be closed. Among the affected installations are 53 military housing areas, including the Wherry housing area addressed in this preliminary assessment.¹

Legislative directives require that all base closures and realignments be performed in accordance with applicable provisions of the National Environmental Policy Act (NEPA). As a result, NEPA documentation is being prepared for all properties scheduled to be closed or realigned. The newly formed Base Closure Division of the U.S. Army Toxic and Hazardous Materials Agency is responsible for supervising the preliminary assessment effort for all affected properties. These USATHAMA assessments will subsequently be incorporated into the NEPA documentation being prepared for the properties.

This document is a report of the enhanced preliminary assessment (PA) conducted by Argonne National Laboratory (ANL) at the Army stand-alone housing area in St. Louis, Mo.

1.1 AUTHORITY FOR THE PA

The USATHAMA has engaged ANL to support the Base Closure Program by assessing the environmental quality of the installations proposed for closure or realignment. Preliminary assessments are being conducted under the authority of the Defense Department's Installation Restoration Program (IRP); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Public Law 91-510, also known as Superfund; the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499; and the Defense Authorization Amendments and Base Closure and Realignment Act of 1988, Public Law 100-526.

In conducting preliminary assessments, ANL has followed the methodologies and procedures outlined in Phase I of the IRP. Consequently, this PA addresses all documented or suspected incidents of actual or potential release of hazardous or toxic constituents to the environment.

In addition, this PA is "enhanced" to cover topics not normally addressed in a Phase I preliminary assessment. Specifically, this assessment considers and evaluates the following topical areas and issues:

- Status with respect to regulatory compliance,
- Asbestos,
- Polychlorinated biphenyls (PCBs),
- Radon hazards (to be assessed and reported on independently),
- Underground storage tanks,
- Current or potential restraints on facility utilization,
- Environmental issues requiring resolution,
- Health-risk perspectives associated with residential land use, and
- Other environmental concerns that might present impediments to the expeditious "excessing," or transfer and/or release, of federally owned property.

1.2 OBJECTIVES

This enhanced PA is based on existing information from Army housing records of initial property acquisition, initial construction, and major renovations and remodeling performed by local contractors or by the Army Corps of Engineers. The PA effort does not include the generation of new data. The objectives of the PA include:

- Identifying and characterizing all environmentally significant operations (ESOs),
- Identifying property areas or ESOs that may require a site investigation,
- Identifying ESOs or areas of environmental contamination that may require immediate remedial action,
- Identifying other actions that may be necessary to address and resolve all identified environmental problems, and
- Identifying other environmental concerns that may present impediments to the expeditious transfer of this property.

1.3 PROCEDURES

The PA began with a review of Army housing records located at the U.S. Army Charles Melvin Price Support Center in Granite City, Ill., approximately 6 miles north of East St. Louis, Ill., the week of August 24-25, 1989. Additional information was obtained from the Family Housing Office, Price Support Center, and from conversations with personnel from the Environmental Engineering Office, Price Support Center. A site visit was conducted at the Wherry housing area, St. Louis, Mo., on August 24, 1989, at which time additional information was obtained through personal observations of ANL investigators. Photographs were taken of the housing units and surrounding properties as a means of documenting the condition of the housing units and immediate land uses. Site photographs are appended.

All available information was evaluated with respect to actual or potential releases to air, soil, and surface and ground waters.

Access to individual housing units was obtained through the housing manager at the facility.

2 PROPERTY CHARACTERIZATION

2.1 GENERAL PROPERTY INFORMATION

The Wherry housing area is located in the city of St. Louis, St. Louis County. The eastern Missouri property consists of 13 acres.² Figures 1 and 2 show the general location of the facility.

The housing units were constructed in 1956 as private real estate. The Army purchased the housing site in the 1960s.³ No additional major construction has taken place on the property since that time. However, construction to join two two-family

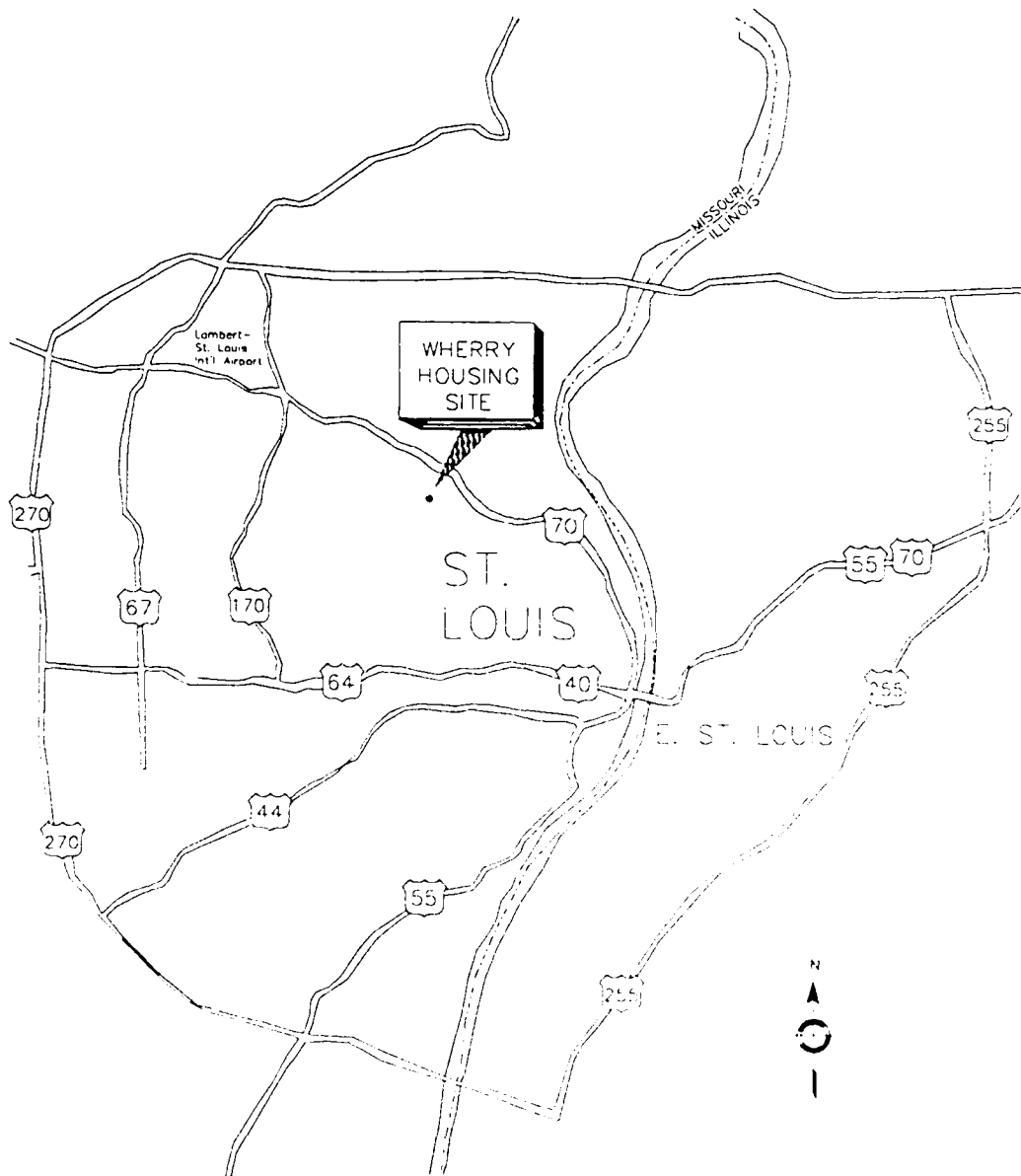


FIGURE 1 Location Map of Wherry Army Housing Facility

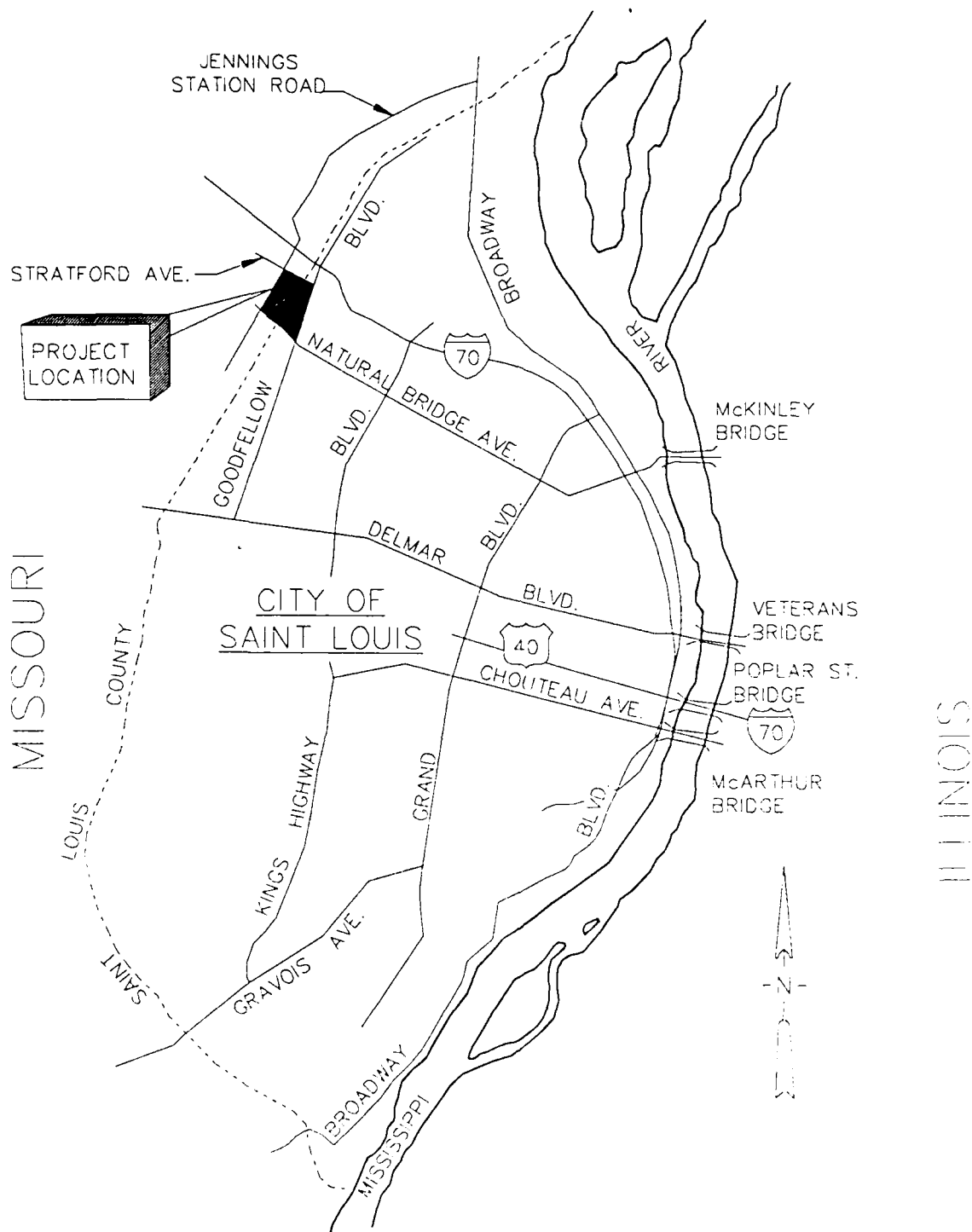


FIGURE 2 Vicinity Map of Wherry Army Housing Units

dwelling to make one four-family unit has occurred. The Office of the Housing Manager at the Price Support Center is responsible for major renovations and maintenance within the facility.

2.2 DESCRIPTION OF FACILITY

Figure 3 presents the site plan of the housing property.

Housing Units

The Wherry housing area consists of 16 housing buildings, containing a total of 94 units. Each unit has either three or four bedrooms, one family room, and a storage room. Each housing building consists of four to seven housing units joined under one roof, with a common utility room on the end of the building. These wood-frame, two-story buildings are built on concrete slabs.⁴ Gas lines are embedded in the foundation slab. Residents are responsible for their own lawn maintenance.

Utilities

Since development of the property, the housing units have been supplied with natural gas and city water. Informal information indicates that the underground water pipes of the utility rooms are probably made of asbestos and cement. No documentation was found to support this. There are no drinking water wells on the property. The main drinking water supply line is owned by St. Louis County, but the feeders to the individual buildings are owned by the Army. The property receives electricity from the city of St. Louis. The telephone poles and transformers on-site are the responsibility of the St. Louis Union Electric Company, but the electrical wires leading into the homes are owned by the Army.³ Information regarding whether the transformers were tested and tagged for PCBs could not be located.

Sewage

The Wherry housing area is fully connected to the City of St. Louis Metropolitan Sanitary Sewer System. Confirmation of the date of connection to the sewer system was not possible, but it is believed that this occurred in 1958.

Fuel Storage

There are no underground storage tanks at the Wherry housing site.

Storm Drainage Systems

The property is drained by a combination storm and sanitary sewer system.²

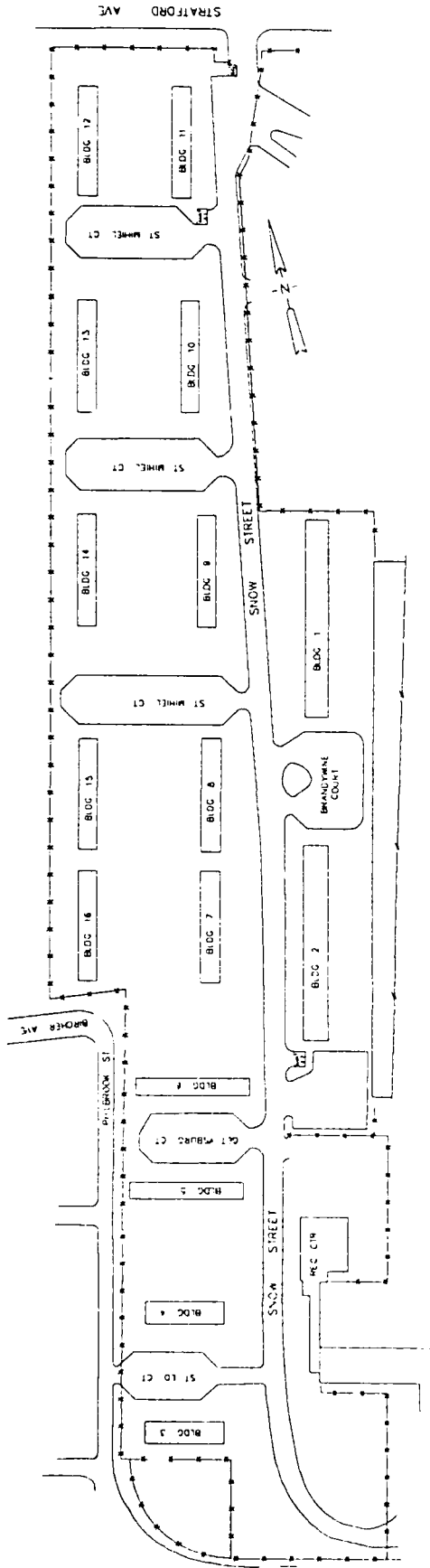


FIGURE 3 Site Plan Map of Wherry Army Housing Units

Other Permanent Structures or Property Improvements

In addition to housing, a recreation center and sentry station stand on the Wherry site; these were built independently of the housing buildings and at earlier dates. The recreation center, built in 1939,⁴ was used as a shower building for workers from an ammunition plant that was once adjacent to the housing area. Informal information indicates that detonation parts were discovered in the ground while constructing the Job Corps building on Army property immediately adjacent to the recreation building. During World War II (WWII), the recreation center was used to store detonators from this ammunition plant.

The recreation center now serves the residents of the housing area and contains electronic and table games. The sentry station was built in 1952,⁴ and informal information indicates it was also affiliated with the ammunition plant.

There are also two buildings on the site which are used for storage of maintenance materials. The maintenance materials consist of yard equipment and aerosol pesticides. There were no problems observed in these storage facilities.

2.3 PROPERTY HISTORY

Informal information indicates that the housing buildings in the Wherry housing area were developed in 1956 as private real estate. The housing area was not developed originally for military use. Sixteen housing buildings containing 94 family units are on the property. Property improvements include the installation of storage sheds for 40 residences in 1966, and for 8 more in 1973.⁴

2.4 ENVIRONMENTAL SETTING AND SURROUNDING LAND USE

Wherry is located in a north-central urban area of St. Louis, Mo. On the east border of the housing site is a Job Corps Center operated by the Army Aviation Systems Command.³ Land use surrounding the housing site and Job Corps Center is residential.

2.5 GEOLOGIC AND HYDROLOGIC SETTINGS

The geologic formations in the area consist of layers of sedimentary rock that were deposited by movements of the seas and subsequently eroded. The bedrock formation contains rocks of the Mississippian and Pennsylvanian periods consisting of limestone, sandstone, and shale. Soil in the area consists of a relatively thin upper mantle of fine-grained cohesive alluvial deposits, overlaying a significant thickness of granular soils above limestone bedrock. The upper portion of the granular deposits is alluvial in origin, while the lower section of valley fill is believed to be partly glacial valley-train material, still present because of incomplete river scour and reworking in recent times.⁵ The predominantly finer-grained top stratum was laid down by the Mississippi River as it meandered across the floodplain, leaving behind such features as

oxbow lakes; point-bar sand deposits; back-swamp clays; and natural levee deposits of clays, silts, and sands. A meander belt such as this is characterized by marked lateral and vertical discontinuities, and by wide variations in grain size and permeability.⁶

The main aquifer underlying the area is recharged from downward percolating rainfall and floodwaters, or seepage from the Mississippi River. The groundwater is generally 15 to 20 feet below the ground surface with its level dependent on numerous factors including climate and local pumping demand.⁵ Runoff at the housing area is to the south, along the main paved street. The west side of the housing area, between the rows of housing buildings, is subject to standing water after a rainfall because of poor drainage and its low level.

3 ENVIRONMENTALLY SIGNIFICANT OPERATIONS

3.1 SEPTIC SYSTEM PROBLEMS

There are no records of sewage problems on this property. It is believed that these housing units have been connected to the municipal sewer system since their construction.

3.2 UNDERGROUND STORAGE TANKS

There are no records of either above- or underground storage tanks on this property. The buildings have been supplied with natural gas for indirect heating and cooling since their construction.

3.3 TRANSFORMERS

There are nine transformers on this property, which belong to the city of St. Louis. Information regarding whether the transformers were tested and tagged for PCBs was not available. There was no evidence of spills or leaks from any of these transformers.³

3.4 ASBESTOS

Asbestos was reported by housing management to be present at the Wherry housing site in utility rooms of the housing buildings. The residents have limited access to these locked utility rooms which are not internally connected to the units of each building. Asbestos was used to insulate hot-water pipes and the water heaters in these utility rooms. No asbestos is present in the individual units on the housing site. Asbestos was also reportedly used in the cement construction of the utility rooms.⁷ None of the asbestos found was deteriorated, however.

3.5 RADON

Radon testing was being conducted at the Wherry housing area by the site environmental engineers. Alpha-particle sampling canisters were placed in the individual housing units during the summer of 1989. These detectors were evident during the site visit. The environmental engineers were responsible for collecting the detectors after their 90-day monitoring period ended in late September.

The radon monitoring was being conducted in response to an Army directive and was also to have been performed as part of the assessment of properties being excessed. However, because the radon monitoring program implemented by the Price Support Center housing officials was equivalent in scope and design, additional radon monitoring under the Base Closure Program will not be performed at these housing units.

4 KNOWN AND SUSPECTED RELEASES

No major releases or impacts on the environment are known to have occurred at the Wherry housing area. No hazardous wastes or hazardous materials are stored on-site.

The nine transformers on the housing site are the property of the city of St. Louis. Although the transformers do not appear to have leaked, there is no evidence that they have been tested for PCBs.

Asbestos is reported to be present in the utility rooms of the housing buildings in the insulation around water pipes and water heaters. However, the insulation is in generally good condition.

5 PRELIMINARY ASSESSMENT CONCLUSIONS

The Wherry housing units were built as private residences. Prior to housing construction a portion of this land was used in conjunction with a WWII ammunition plant.

The housing buildings are in good condition, while the only environmental concern is the asbestos present in the utility rooms in the insulation around the water pipes and water heaters. However, the insulation is in generally good condition.

6 RECOMMENDATIONS

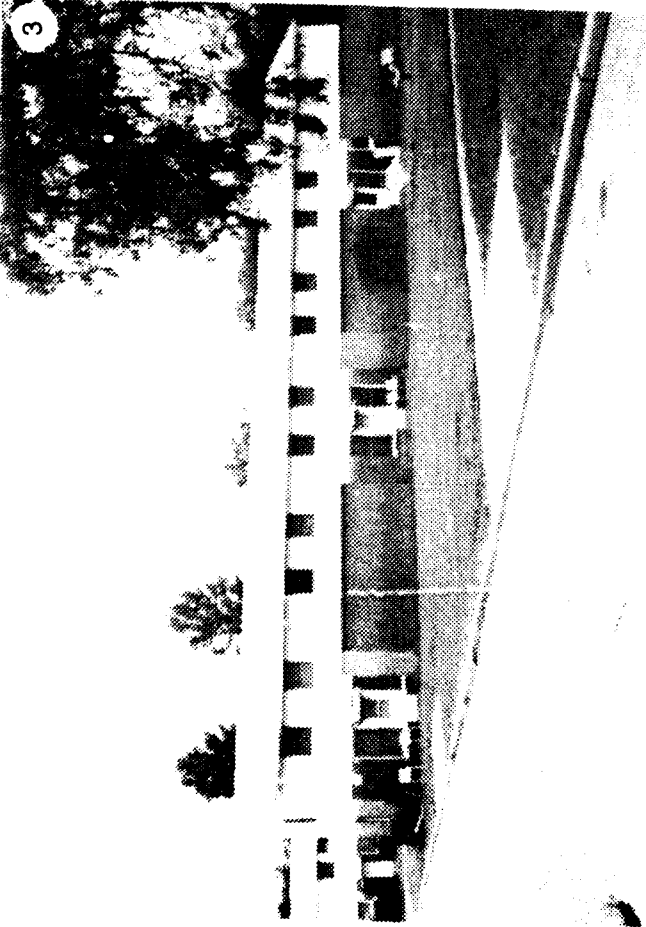
The Wherry housing area presents no imminent or substantial threat to human health or the environment. There is no evidence to suggest that hazardous or toxic constituents have ever been released from this property.

No action is recommended prior to the release of this property. It is assumed that the property will most likely continue to be used for residential housing.

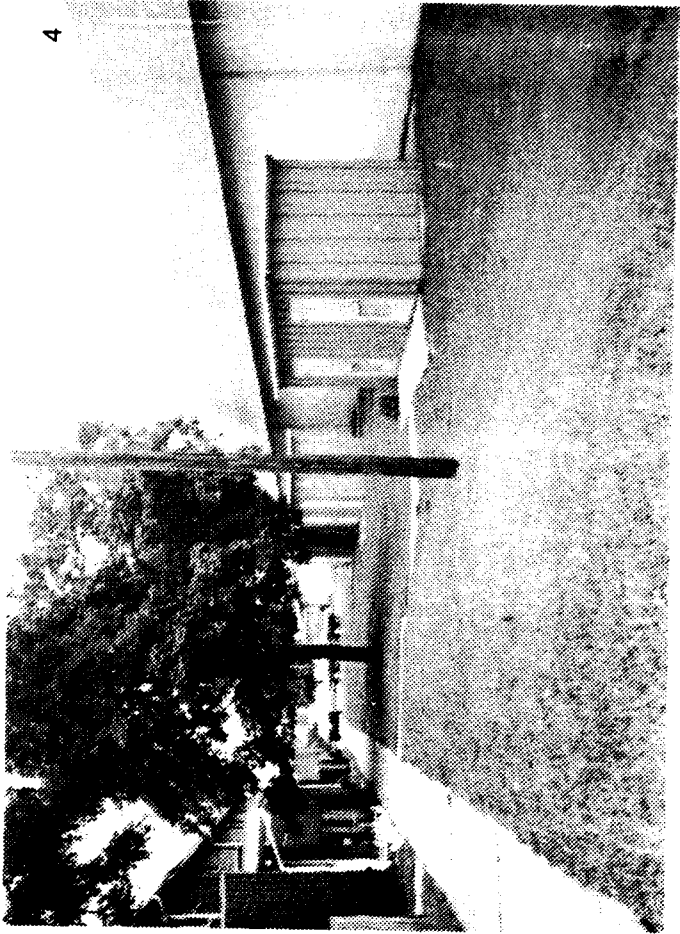
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3. Field notes of ANL investigators for Wherry Housing site visit (Aug. 24, 1989).
4. Building Information Schedule for Charles Melvin Price Support Center, Wherry Housing, Granite City, Ill., Directorate of Engineering and Housing (March 31, 1989).
5. Master Plan for U.S. Army Price Support Center, prepared for St. Louis Support Center by Booker Assoc. Corp., St. Louis, Mo., Contract #DACA 27-85-COOL (May 1987).
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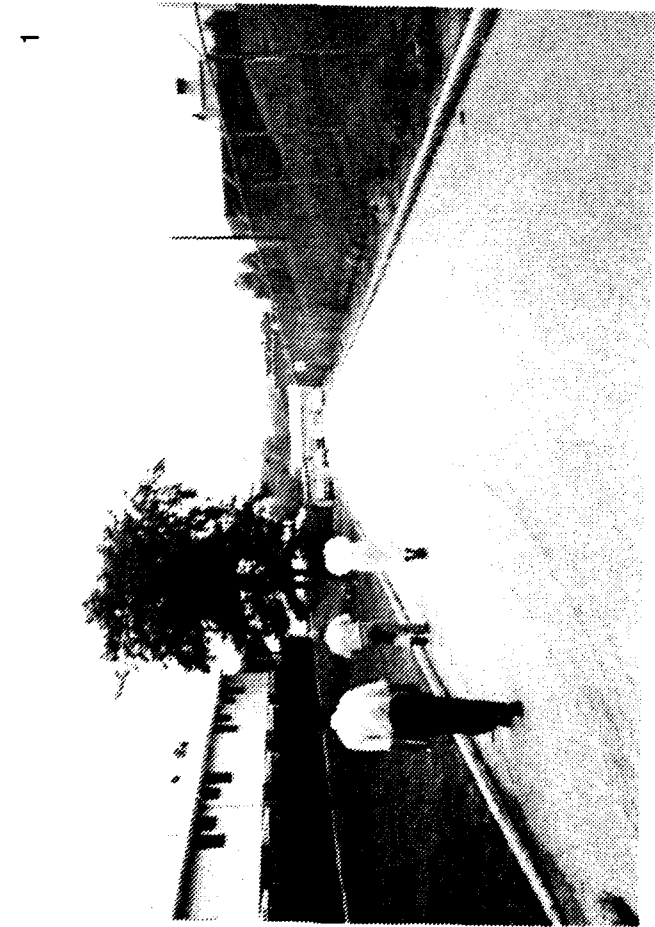
APPENDIX:
PHOTOGRAPHS OF WHERRY HOUSING FACILITY
AND SURROUNDING LAND



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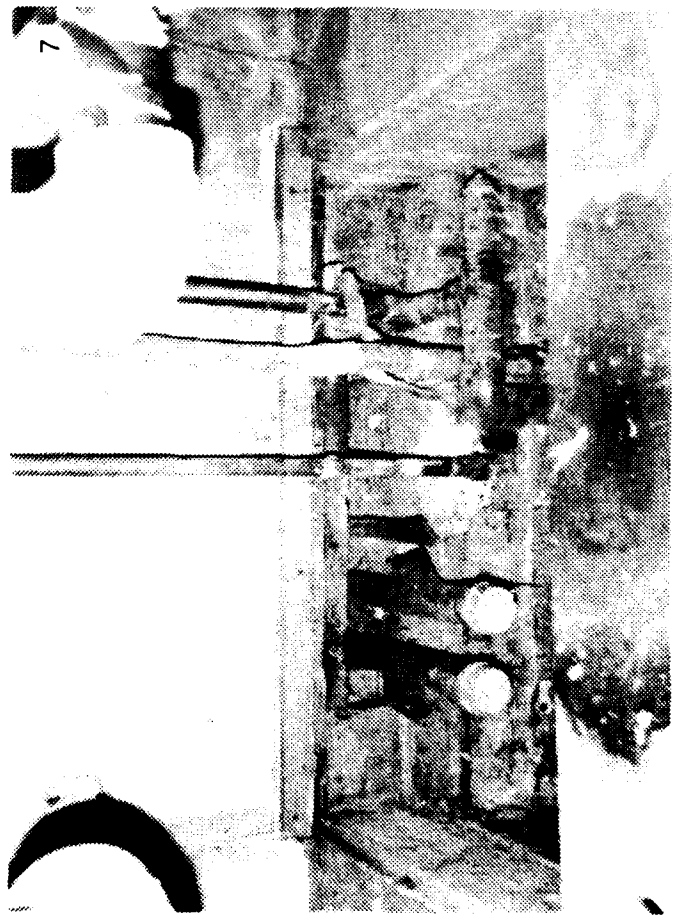
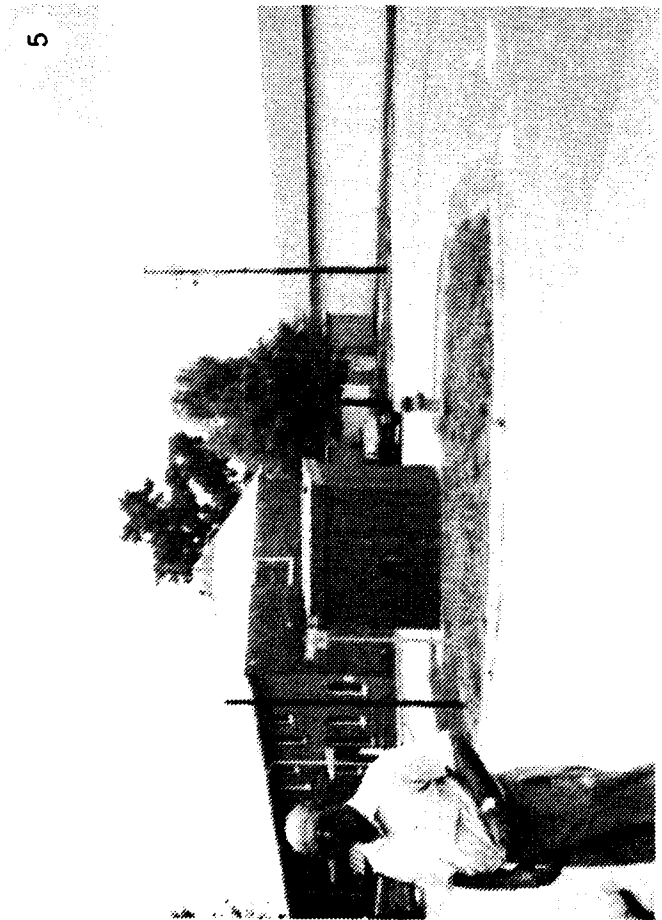
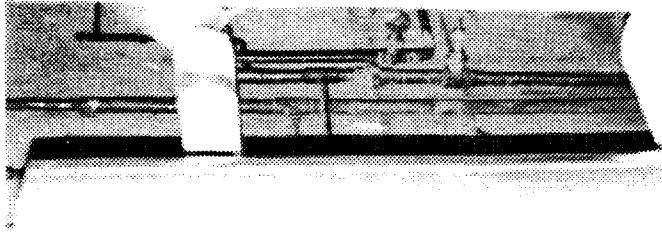
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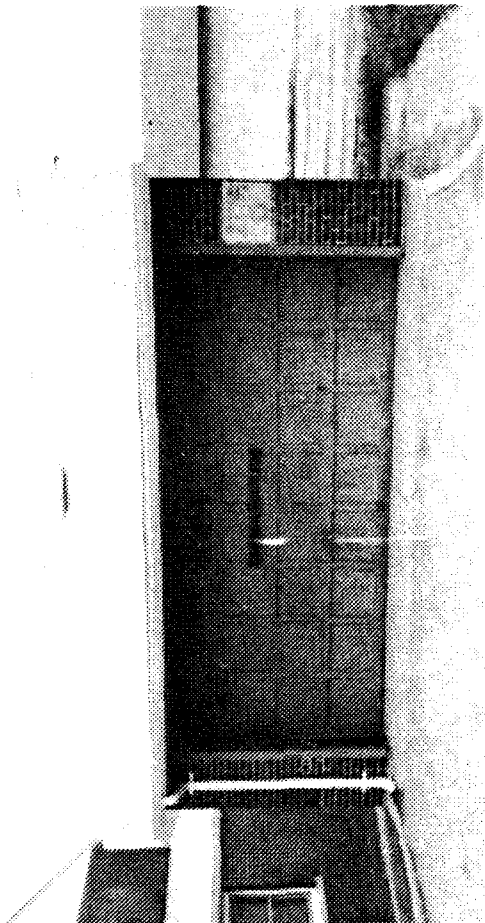
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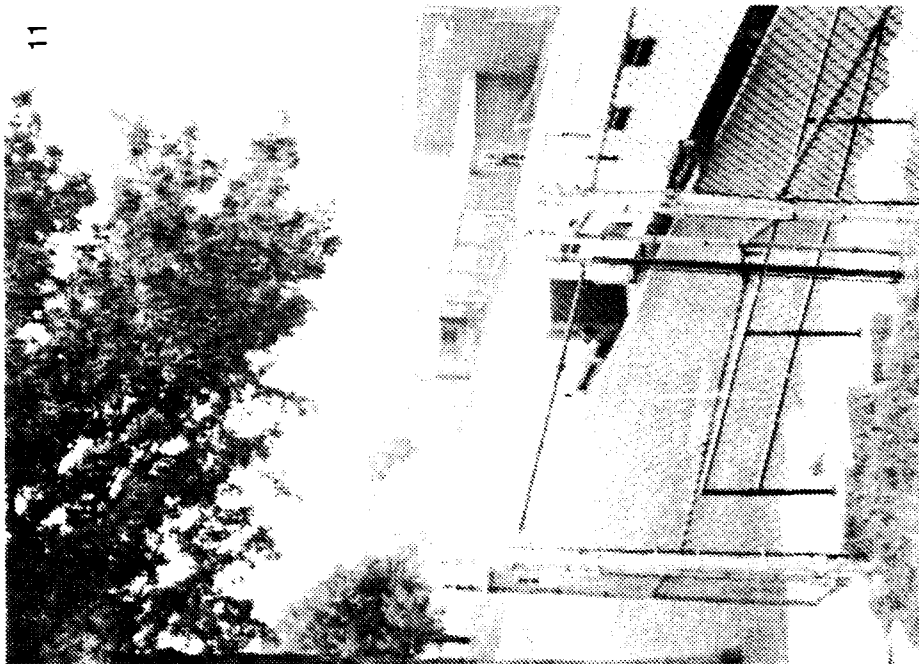
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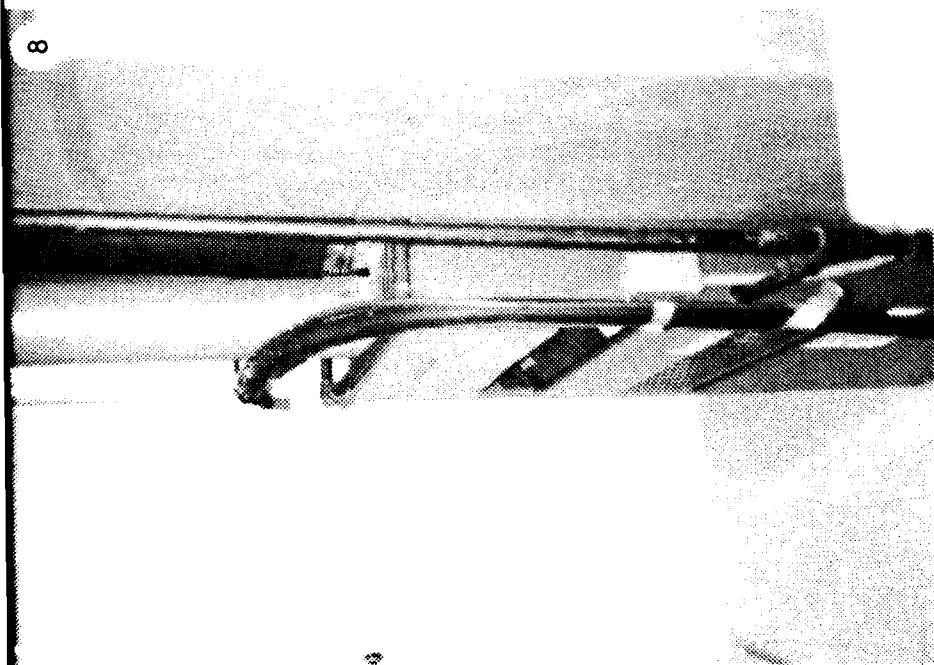
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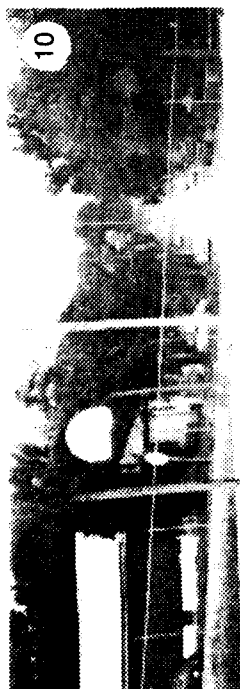
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IDENTIFICATIONS OF PHOTOGRAPHS

1. Snow Street, looking northeast, with housing buildings at left and a Job Corps Center building at right (outside the housing property); guard post for the housing area is at the center of the view, at the end of the road.
2. Front view of Bldg. 3 and entrances to individual housing units in the building.
3. Rear of a housing building and storage sheds.
4. Another view of the storage sheds behind Bldg. 2; sheds used by six units in the building.
5. Housing building, storage shed, and electric utility pole with transformer at the top are seen in this view (building with no windows is the Job Corps Center building); transformers are owned by the local utility.
6. Hot water tank and pipes inside a housing building utility room.
7. Water piping under a housing building; these pipes were encased in asbestos and cemented over.
8. Each housing unit has its own furnace; a furnace in one of the units is shown here.
9. Maintenance equipment used at housing area is stored in this building.
10. A basketball court southwest of Bldg. 3.
11. Northeast view from the basketball court towards recreation center.